Items #65: Suitable But Unoccupied Habitat for Water Howellia

Purpose: In the Swan Valley, several ponds have been delineated that are potentially suitable habitat for water howellia; however no plants have been detected in these ponds. Suitable, unoccupied ponds (u-ponds) may contain undetected water howellia plants or can provide suitable habitat for dispersal.

Methods: The Flathead National Forest began identifying and delineating unoccupied ponds of suitable habitat for water howellia (u-ponds) in 1995. About 72 u-ponds were initially monitored beginning 1998. Several of these u-ponds have since been determined to be un-suitable and have been dropped from annual monitoring. Other u-ponds have become occupied water howellia ponds and are now monitored as occupied ponds. Currently, 51 u-ponds are annually monitored. Presence/absence and abundance data at u-ponds were collected using the same methods as described for the occupied ponds in the previous section.

Results: Water howellia was detected in 14 u-ponds during annual monitoring efforts from 1998 through 2007 (Table 65-1). No new u-ponds were detected during 2000, 2002, 2004, 2006, and 2007 monitoring.

Table 65-1. U-ponds With Water Howellia Detected During Monitoring Efforts.

u-pond	EO #	Status	u-pond	EO #	Status	u-pond	EO #	Status	u-pond	EO #	Status
1998 monitoring year			**1999 monitoring year**			**2001 monitoring year**			**2003 monitoring year**		
u-051	006	Yes	u-024	108	Yes	u-010	130	No	u-076	140	No
u-066	107	Yes	u-084	109	Yes	u-017	131	No			
u-046	103	Yes	u-053	111	Yes						
u-031	110	No	u-052	112	Yes						
			u-073	113	Yes						
			u-032	114	No						
u-pond	**EO #**	**Status**									
2005 monitoring year											
u-067	TBA	Yes									

Yes = annual monitoring continued as part of the 10-year monitoring plan; No = not currently monitored

Evaluation: Water howellia plants may have been undetected during previous surveys in these newly identified occupied ponds for several reasons. 1) Plants may have been overlooked during surveys. If ponds are surveyed too late in the season and plants desiccate, detection would be difficult. Also ponds surveyed before peak flowering may also decrease likelihood for detection. 2) Seeds may have remained dormant during the undetected monitoring years. 3) Plant segments containing reproductive structures may have been transferred by ungulates using the ponds or by surveyors during monitoring efforts but may not be established at time of monitoring. If u-ponds receiving plant segments are suitable for water howellia establishment, plants would be detected in years following dispersal of plant segments.

Not all ponds may reflect the suggested trend of high water howellia frequency and abundance in a year following a low precipitation water year as suggested from 9 years of preliminary data.

For example, u-pond 073, now EO 113, was surveyed in 1995, a year that was thought one of the best for water howellia on record following the drought year of 1994 and did not support howellia until 1999. Fifty new water howellia ponds were located in 1995; 10 of which were in the immediate vicinity of u-pond 073. Regardless, no plants were seen in that pond until 1999, when an obvious prolific patch was located.

Recommendations: Continued monitoring of these mapped u-ponds is recommended to detect additional ponds and help evaluate population trends in the Swan Valley.